



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,433	12/05/2005	Kenichi Fukuoka	28955.1066	4780
27890	7590	06/18/2008		
STEP TOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EXAMINER MACCHIAROLO, PETER J	
			ART UNIT 2879	PAPER NUMBER
			MAIL DATE 06/18/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,433

Applicant(s)

FUKUOKA ET AL.

Examiner

PETER J. MACCHIAROLO

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :04/08/2008, 03/12/2008, 12/05/2005.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 04/08/2008, 03/12/2008 and 12/05/2005 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

It is noted that the IDS contains an extremely large number of references. The examiner has considered all of the references that have been initialed, but has not found any to be particularly relevant. If applicant is aware of pertinent material in the references, an official statement should be made in a response to this Office action. Applicant is reminded of applicant's duty of disclosure pursuant MPEP § 2004:

It is desirable to avoid the submission of long lists of documents if it can be avoided. Eliminate clearly irrelevant and marginally pertinent cumulative information. If a long list is submitted, highlight those documents which have been specifically brought to applicant's attention and/or are known to be of most significance. See *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), *aff'd*, 479 F.2d 1338, 178 USPQ 577 (5th Cir. 1973), *cert. denied*, 414 U.S. 874 (1974). But cf. *Molins PLC v. Textron Inc.*, 48 F.3d 1172, 33 USPQ2d 1823 (Fed. Cir. 1995).

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohama (JP 2000243574: “Kohama”).

Regarding claim 1, Kohama discloses at least in figure 1 and paragraphs 8 and 25-33 an organic electroluminescent device comprising: an emitting layer (18) between a pair of electrodes that are an anode (12) and a cathode (24), and a suppressing layer (16) arranged between an electrode (12) and the emitting layer (18), the suppressing layer (16) regulating the amount of electrons or holes supplied to the emitting layer.

Regarding claim 2, Kohama discloses at least in figure 1 and paragraphs 8, 11 and 25-33 an electron injecting layer (22) and an electron-injection-suppressing layer (not shown) that suppresses electron injection are arranged between the cathode (24) and the emitting layer (18), and the electron mobility of the electron-injection-suppressing layer is smaller than the electron mobility of the electron injecting layer.

Regarding claim 7, Kohama discloses at least in figure 1 and paragraphs 8 and 24-33 a hole injecting layer (14) and a hole-injection-suppressing layer (16) are arranged between the anode (12) and the emitting layer (18), and the hole mobility of the hole-injection-suppressing layer is smaller than the hole mobility of the hole injecting layer.

Regarding claims 8 and 9, Kohama discloses at least in paragraph 22 the emitting layer emits blue light and a display that comprises a screen comprising the organic electroluminescent device of claim 1.

Claims 1-2 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuyama (US 20010005021: "Fukuyama").

Regarding claim 1, Fukuyama discloses at least in figure 1 and paragraph 56 an organic electroluminescent device comprising: an emitting layer (5) between a pair of electrodes that are an anode (2) and a cathode (8), and a suppressing layer (9) arranged between an electrode (2) and the emitting layer (5), the suppressing layer (9) regulating the amount of electrons or holes supplied to the emitting layer.

Regarding claim 2, Fukuyama discloses at least in figure 1 and paragraph 32 an electron injecting layer (7) and an electron-injection-suppressing layer (not shown) that suppresses electron injection are arranged between the cathode (8) and the emitting layer (5), and the

electron mobility of the electron-injection-suppressing layer is smaller than the electron mobility of the electron injecting layer.

Regarding claim 7, Fukuyama discloses at least in figure 1 and paragraphs 8 and 24-33 a hole injecting layer (3) and a hole-injection-suppressing layer (9) are arranged between the anode (2) and the emitting layer (5), and the hole mobility of the hole-injection-suppressing layer is smaller than the hole mobility of the hole injecting layer.

Regarding claims 8 and 9, Fukuyama discloses in at least paragraph 35 the emitting layer emits blue light and a display that comprises a screen comprising the organic electroluminescent device of claim 1.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant cited Hara (JP 08-222373: "Hara").

Regarding claim 1, Hara discloses at least in figure 1 an organic electroluminescent device comprising: an emitting layer (3) between a pair of electrodes that are an anode (1a) and a cathode (4), and a suppressing layer (2b) arranged between an electrode (1a) and the emitting layer (3), the suppressing layer (2b) regulating the amount of electrons or holes supplied to the emitting layer.

Regarding claim 2, Hara discloses at least in figure 1 an electron injecting layer (2a) and an electron-injection-suppressing layer (2b) that suppresses electron injection are arranged

between the cathode (4) and the emitting layer (3), and the electron mobility of the electron-injection-suppressing layer is smaller than the electron mobility of the electron injecting layer.

Regarding claim 3, Hara discloses at least in figure 1 the affinity level (Af1) of the emitting layer, the affinity level (Af2) of the electron-injection-suppressing layer and the affinity level (Af3) of the electron injecting layer satisfy the following relationship, $Af1 < Af2$, $Af3 \leq Af2$.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuyama in view of Kawamura (JP 2000-186094; “Kawamura”).

Regarding claims 4-6, Fukuyama discloses that the electron injecting-suppressing layer includes material from the electron injection layer, and that any material may be used for the electron injection layer, but is silent to the electron injecting layer or electron injection suppressing layer comprising a nitrogen-containing cyclic compound.

However, Kawamura teaches that this electron injection layer compound reduces the weight and power consumption of an OLED device. Further, one of ordinary skill would realize that the material used in the electron injection layer must also be used in the electron injection-suppressing layer as disclosed by Fukuyama.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Fukuyama with the electron injection layer of Kawamura to reduce the weight and power consumption of an OLED device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

/Peter Macchiarolo/
Primary Examiner, Art Unit 2879
(571) 272-2375

